

ABSTRACT

There is provided composite nano-particles comprising nano-crystal particles dispersed stably and individually in suspension in high concentration without mutual aggregation of the nano-particles. A determined amount of pure water or deionized water is poured into a reactor, into which is introduced nitrogen gas at rate of 300 cm³/min for a given time while agitating with a stirrer to remove dissolved oxygen in the pure water, allowing to stand in an atmosphere of nitrogen. Next, the inside of the reactor is maintained in an atmosphere of nitrogen and sodium citrate as a dispersion-stabilizing agent, an aqueous solution of MPS as a surface-modifying agent, an anion aqueous solution for co-precipitation as a nano-crystal and a cation aqueous solution are added, in that order. Then, an aqueous solution of sodium silicate is added to the reactor, which is then allowed to stand in the dark place in an atmosphere of nitrogen after agitation. At that time, a vitrification-inhibiting agent may be added in order to inhibit the growth of glass layer.